BioSystems, 24 (1991) 331–333
Elsevier Scierntific Publishes Ireland Ltd.

Contents

Volume 24

No. 1

MOLECULAR SYSTEMS

Light dependent pH gradients are generated in liposomes containing ferrocyanide
D.W. Deamer and E. Harang (Davis, CA) 1

CELLS

Sheathed nuclear division in primary spermatocytes of *Orgyia antiqua* (Lepidoptera, Insecta)
K.W. Wolf (Lübeck, F.R.G.) 5

Towards a generalized model of encystment (cryptobiosis) in ciliates: a review and a hypothesis
J.C. Gutiérrez, A. Martin-Gonzalez and T. Matsusaka (Madrid, Spain and Kumamoto, Japan) 17

CELLULAR NETWORKS

Consequences for retinal growth when vision occurs in S^2 space
G. Thor, N. Nitsure and H. Hastings (Bombay, India, San Diego, CA and Hempstead, NY) 25

MODEL SYSTEMS

Investigation of the conditions for oscillations in two-variable models of biological processes
R.E. Mickens (Atlanta, GA) 31

Network study of integrated biochemical switching system I: Connection of basic elements
M. Okamoto and K. Hayashi (Iizuka and Kyushu, Japan) 39

EVOLUTIONARY MECHANISMS

Protein phosphorylation: a motive force for adaptive evolution
A.V. Vener (Moscow, USSR) 53

The geometry of evolution
M. Conrad (Detroit, MI) 61

ANNOUNCEMENT 83

No. 2

MODEL SYSTEMS

MPF and cyclin: modelling of the cell cycle minimum oscillator
C. Hyver and H. Le Guyader (Gif-sur-Yvette and Orsay, France) 85

A non-archimedean theory of interaction of chemical compounds with membranes
O. Iordache, R. Isopescu, A. Isopescu and P.T. Frangopol (Bucharest, Romania) 91
Experiments with a universe for molecular modelling of biological processes
W.T. Jedruch and M. Barski (Ottawa, Canada) 99
A predictive model for life expectancy curves
P.E. Kloeden, O.E. Rössler and R. Rössler (Murdoch, Australia and Tübingen, F.R.G.) 119
Does a cell perform isoelectric focusing?
J. Flegr (Prague, Czechoslovakia) 127

RNA, DNA, AND PHYLOGENY

Interrelationship among major protistan groups based on a parsimony network of 5S rRNA sequences
S. Krishnan, S. Barnabas and J. Barnabas (Pune and Ahmednagar, India) 135
Characterization of nuclear DNA in 12 species of *Chlorella* (Chlorococcales, Chlorophyta) by DNA reassociation
R. Dörr and V.A.R. Huss (Erlangen, F.R.G.) 145
Chromosomal evolution in Cervidae
F. Fontana and M. Rubini (Ferrara, Italy) 157

BOOK REVIEW 175

No. 3

MODEL SYSTEMS

Polycondensation and peptide chain-length distribution under prebiotic conditions
W.M. Getz (Berkeley, CA) 177
Linear feedback control of acetylcholine level in the presynaptic terminal
N. Sakamoto (Tsukuba, Japan) 183
Spatial and vacany effects on the stabilising mechanisms of two-dimensional free growth
M.A. El-Messiery (Mekkah, Saudi Arabia) 193
A numerical model for the oxygenation of blood in lung capillaries — effect of *n*th order one-step kinetics of oxygen uptake by haemoglobin
M. Sharan and B. Singh (New Dehli, India) 209
A model for aggregation-dispersion dynamics of a population
F. Lara-Ochoa and V.P. Bustos (Morelos, Mexico) 215
Density dependent diffusional model of an infective population
F. Lara-Ochoa and V.P. Bustos (Morelos, Mexico) 223

GENETIC CODE

A generalized information function applied to the genetic code
T. Alvager, G. Graham, R. Hilleke, D. Hutchison and J. Westgard (Terre Haute, IN and Charleston, SC) 239

CELLS

Cyanobacteria or Rhodophyta? Interpretation of a Precambrian microfossil
M.V. Enzien (Boston, MA) 245

ANNOUNCEMENTS 253

No. 4

MODEL SYSTEMS

Mitochondrial activity and development: energy carrier selection in a controlled reaction mechanism
M.I. Granero, S. Mori and A. Porati (Parma, Italy) 255

On the skew distribution of immunoglobulins and the inverted protein-folding problem
M.A. Jimenéz-Montaño and F. Lara-Ochoa (Xalapa and Cuernavaca, Mexico) 261

A continuum model of contraction waves and protoplasm streaming in strands of *Physarum* plasmodium
V.A. Teplov, Yu.M. Romanovsky and O.A. Latushkin (Moscow, U.S.S.R.) 269

A system control framework for the self-fertilization and selection process of breeding
Chen Jian, Zheng Weimin and Wang Yongxian (Beijing, China) 291

EVOLUTIONARY THEORY

On the divergence of species
M.A. Livshits and M.V. Volkenstein (Moscow, U.S.S.R.) 301

MICROBIAL EVOLUTION

Oxygen toxicity and microbial evolution
T. Bilinski (Sawickiej, Poland) 305

Search for eukaryotic motility proteins in spirochetes: immunological detection of a tektin-like protein in *Spirochaeta halophila*
A.L. Barth, J.A. Stricker and L. Margulis (Amherst, MA and Colorado Springs, CO) 313

BOOK REVIEWS 321

Subject Index 325
Author Index 329
Contents 331